REMARKS

The Examiner has asserted a number of rejections and they are addressed in the order presented below.

I. Claims 1-8 and 14-31 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by United States Patent No. 6,048,734 To Burns et al.

II. Claim 22 is rejected under 35 U.S.C. § 112 ¶ 2 as allegedly being indefinite.

III. The Specification is objected to for improper trademark references.

I. The Claims Are Not Anticipated

As the Examiner is well aware, a single reference must disclose each limitation of a claim in order for that reference to anticipate the claim. *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, 224 U.S.P.Q. 409, 411 (Fed. Cir. 1984). This criterion is not met with the Burns et al. reference.

The Examiner apparently believes that Burns et al. discloses each and every element of Applicants' Claim 1, 14, and 22. *Office Action pg 3-4 ¶ 6.* The Applicants strongly disagree. In an effort to justify this erroneous conclusion the Examiner points to several passages within Burns et al. as evidence[1]. We analyze those passages below and conclude that they do not teach: i) any cooling means associated with any element of any device; or ii) the creation of any type of convection cell (i.e., generated by a differential temperature gradient) within a solution following its introduction into a reaction vessel.

Nonetheless, without acquiescing to the Examiner's argument but to further the prosecution, and hereby expressly reserving the right to prosecute the original (or similar) claims, Applicants have amended Claims 1, 14, and 22 to further clarify that: i) the heat source "contacts the bottom of the reaction vessel" (*Applicants' Specification pg 45 ln*

[1] col 4, lines 27-42; col 5-6; and especially Example 3, col. 18, beginning at line 34 to col. 19, line 38. *Office Action pg. 3 ¶ 6.*

10-11); ii) an active cooling means "contacts the top of the reaction vessel" (*Applicants' Specification pg 5 ln 19-21*) wherein the cooling means is "a water bath or a refrigeration device" (*Applicants' Specification pg 5 ln 2-3*); iii) "a solution comprising a plurality of reactants" (*Applicants' Specification pg 3 ln 4 and pg 28 ln 11-14*; iv) "creating at least one convection cell" (*Applicants' Specification pg 28 ln 15-19*); and v) "forming a reaction product" (*Applicants' Specification pg 4 ln 29*). Claim 22 also now recites that the reaction chamber has "an aspect ratio of at least 3.3" (*Applicants' Specification pg 3 ln 29 – pg 4 ln 1*). Claims 16 and 26 are concomitantly canceled while Claims 7, 17, 20, 27, and 30 are concomitantly amended to maintain proper antecedent basis relationships. These amendments are made not to acquiesce to the Examiner's argument but only to further the Applicants' business interests, better define one embodiment and expedite the prosecution of this application.

A. Examiner's Citation of Burns' Col. 4 lines 27-42

This passage does not teach any cooling means. This, alone, is enough to require the Examiner to withdraw the present rejection. Further, this passage does not teach applying heat when a solution is within a reaction vessel, nor does it teach the creation of any convection cells.

B. Examiner's Citation of Burns' Col. 5-6

First, the Examiner is reminded that any rejection should be made with specificity. A broad citation to a full page within a patent is not specific. The Applicants deserve to know exactly which teachings within columns 5-6 the Examiner is referring.

Nonetheless, nothing in Columns 5-6 even suggests a cooling means much less teaches one. This, alone, is enough to require the Examiner to withdraw the present rejection. Further, this passage does not teach applying heat when a solution is within a reaction vessel, nor does it teach the creation of any convection cells.

Burns' col 5-6 is not relevant to the Applicants' claimed embodiments and discloses various embodiments of using a meltable material to restrict the flow of a fluid within a microchannel.

C. Examiner's Citation of Example 3 (col 18 ln 34 – col 19 ln 38)

Again, Example 3 contains no teachings that are relevant to creating a convection cell, nor does Example 3 teach any type of cooling means. The Examiner is improperly relying upon temperature differentials developing 'within an isolated microdroplet' to induce microdroplet motion within a channel to allegedly provide a basis for teaching convective cell creation within a solution:

> The present calculations suggest that a ~ 35° C difference between the front and back of a droplet should be sufficient to initiate droplet motion ... in a 20 μm high channel.

Burns et al. col 19 ln 25-28. In conclusion, this passage cited by the Examiner does not disclose the development of convective fluid cells within a solution.

Further, Example 3 contains no teachings that a temperature differential is responsible for forming a reactant product. In fact, Example 3 teaches the opposite:

> Following sample merging, the combined droplet was maintained at 65°C for 30 minutes using the integral heaters and temperature sensors.

Burns et al., col 20 ln 16-18. This example clearly teaches that the entire fluid is at a single temperature and consequently cannot exhibit any convective properties.

The Applicant notes that the Examiner has provided separate arguments directed at the dependent claims. The Applicant respectfully reminds the Examiner, that based upon the above rebuttal to the pending anticipation rejection, the presently amended independent claims should now be allowable. Consequently, all dependent claims are also allowable. The Applicants respectfully request the Examiner to withdraw the present rejection.

II. Claim 22 Is Not Indefinite

The Applicants believe that the above amendments to Claim 22 now make the Examiner's rejection on this basis moot. The Applicants respectfully request the Examiner to withdraw the present rejection.

III. The Specification Does Not Contain Improper Trademarks

The Examiner requests the Applicants amend the specification to correct the trademark designation "Plexiglas™" to all capital letters. The Applicants disagree and argue that the current trademark designation is a legal and statutory approved presentation (see, The Lanham Act) and meets the Examiner's criteria that "... the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks". *Office Action pg 2 ¶ 2.*

Further, the Applicants' argument is supported by the MPEP, as follows:

> Examiner Note:
> Capitalize each letter of the word in the bracket or include a proper trademark symbol, such as ™ or ® following the word.

MPEP 608.01(v) Trademarks and Names Used In The Trade, pg 600-99. Consequently, it is clear that the Applicants' presentation of Plexiglas™ is proper and does not require change. The Applicants respectfully request the Examiner to withdraw the present objection.

CONCLUSION

The Applicants believe that the arguments and claim amendments set forth above traverse the Examiner's rejections and, therefore, request that all grounds for rejection be withdrawn for the reasons set above. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, the Applicants encourage the Examiner to call the undersigned collect at 617.984.0616.

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